

REMARKS

Claims 45-88 are currently pending in the subject application and are presently under consideration.

Favorable reconsideration of the subject patent application is respectfully requested in view of the comments and amendments herein.

I. Rejection of Claims 45-88 Under 35 U.S.C. §102(e)

Claims 45-88 stand rejected under 35 U.S.C. §102(e) as allegedly being anticipated by Kreidler, *et al.* (US 6,975,913 B2). This rejection should be withdrawn for at least the following reasons. Kreidler does not anticipate each and every element set forth in the subject claims.

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ 2d 1051, 1053 (Fed. Cir. 1987). “The identical invention must be shown in as complete detail as is contained in the...claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

The subject application relates generally to industrial control systems, and more particularly to an architecture that can facilitate web-based implementation of HMIs (*see e.g.*, pg. 8, ll. 23-26) in an industrial automation environment (*see e.g.*, pg. 10, ll. 27-28). Moreover, the HMI can be rendered at a central location (e.g., at a server or web server) and delivered to and displayed by browsers operating on client devices (*see e.g.*, pg. 9, ll. 30-31) over a browser session connection previously established. Thus, the client devices can be zero-install clients that run a standard web browser, but without the necessity for any additional application-specific software or higher end hardware. As such, a potential reduction in installation or upgrade costs can be obtained (*see e.g.*, pg. 3, line 22 – pg. 4, line 2).

In particular, independent claim 45 recites, in part, “means for interfacing a server component by way of a network to a set of client devices associated with an industrial automation environment, wherein at least one device included in the set ***is a zero-install client device with respect to rendering a browser-based HMI.***” For example, a client device can display the browser-based HMI *via* a standard web browser and, as a zero-install client device,

can do so without any other application-specific software to manage, format, configure, or determine aspects of the browser-based HMI. Such differs from existing HMI systems since no additional client-side application-specific software is required to render a browser-based HMI, such components need not ever be modified in the event of an update to the HMI architecture. Independent claim 45 also recites, in part, “means for establishing at least one ***persistent browser session*** over the network with at least one browser running on the at least one device included in the set of client devices.” For instance, the persistent browser session can be asynchronous and/or continuous, and thus can push or pull data and further, need not be broken and re-established following a response. This differs from conventional HMI systems that employ browser-based communication to propagate information in that such conventional system only operate by way of well-known query-response models and terminate at the completion of each response cycle, and therefore must be re-initiated for each query. Independent claim 45 further recites, in part, “means for ***transmitting the browser-based HMI over the network by way of the persistent browser session*** to the at least one browser.” For example, processing and other determinations regarding the browser-based HMI can be performed at a central server and propagated to zero-install clients, thus reducing costs for installation, maintenance, and/or updating. In contrast, existing HMI systems employ application-specific software to render the HMI at the client device (e.g., there is no transmission of the HMI to the client device). More specifically, the art of record fails to disclose or suggest each and every element of independent claim 45, as well as similar elements recited in independent claims 48 and 73.

In contrast, Kreidler relates to aggregation of data from a plurality of client automation systems into a central database structure and management of the data. While Kreidler does contemplate leveraging web browsers to effectuate communications between a client and a host (col. 5, ll. 24-34), Kreidler fails to anticipate claim 45 in at least three distinct ways:

First, Kreidler does not disclose or suggest “means for interfacing a server component by way of a network to a set of client devices associated with an industrial automation environment, wherein at least one device included in the set ***is a zero-install client device with respect to rendering a browser-based HMI.***” The Office Action dated July 9, 2010 asserts that the “Zero install client device in the disclosure is not entirely “zero install” as it renders some tools from the server/host device that are associated with the HMI”. In particular, the Office Action asserts that an operating system and a web browser are installed on the client device. However, the

operating system and the web browser are not application specific software. They are general software installed on the client that are independent of any unique requirements associated with a specific web based application running on the server. Pages 3, lines 18-32 of the specification provide clarification regarding the meaning of the term “zero-install client”. More specifically, this paragraph states:

The basic premise of a web-based application is that all (or at least most) of **the application-specific software is installed and runs on a relatively small number of server computers, while the client computers that are used to access the provided functionality need only have the standard operating system and a web browser installed on them.** As both the operating system and the web browser are typically installed on the computer by the vendor, the purchaser needs to do very little (if any) configuration to make these computers functional. **For web-based applications, which require no application-specific client-side software, this results in a so-called “zero-install client.”** Installation and configuration of the application-specific software (in our case, the web-based HMI software) — both the initial installation/configuration and subsequent upgrades/reconfigurations — need only be done on the significantly smaller number of server computers. Furthermore, since the client computers run only a web browser (as opposed to the traditional large, complex, computationally intensive and “resource hungry” application-specific software), significantly lower-cost computing hardware can be used.

In stark contrast Kreidler expressly teaches away from such a solution. In particular, Kreidler requires that **a machine handler be installed and activated on the client** (col. 5, ll. 41-45; FIG. 4, element 56). The machine handler is necessary to interpret downloaded content from the server (col. 5, ll. 54-60). Hence, Kreidler explicitly requires application-specific software (e.g., the machine handler) to exist on the client in order to interact with content from the server. Thus, Kreidler specifically leads away from *a zero-install client device with respect to rendering a browser-based HMI*. The Office Action cites column 2, lines 42-56 as teaching this feature. However, this section of the reference merely discusses using a connection of a public network to communicate data between the host and an automated machine tool. This section is silent regarding *a zero-install client device* as featured in the subject claim.

Second, Kreidler is silent as to “means for establishing at least one *persistent browser session* over the network with at least one browser running on the at least one device included in the set of client devices.” While Kreidler does indicate a browser can be employed to

communicate with the host, such is disclosed in the context of downloading web pages from the host and transferring user data (cited col. 5, ll. 26-34). Such elements are typically achieved by way of a request by the browser followed by a corresponding response from the server, after which communication is immediately terminated. There is no disclosure in Kreidler that can be pointed to that can sustain an anticipation rejection with respect to “at least one persistent browser session,” as Kreidler is void of any such feature or suggestion thereof.

Third, Kreidler does not disclose or suggest “means for *transmitting the browser-based HMI over the network by way of the persistent browser session* to the at least one browser.” In fact, Kreidler discloses that data (e.g., machine tool source code), formatted in a manner that the client side machine handler can interpret, is transmitted to a machine handler interface, which forwards the data to the machine handler, which is then interpreted and delivered for display at the client HMI. It is therefore readily apparent that Kreidler does not relate to transmitting the browser-based HMI over the network, but rather discloses interpreted data transmitted from a **client-side** machine handler to a **client-side** HMI device (cited col. 5, ll. 55-67). Appreciably, such is not disclosed to occur over the network, much less by way of the persistent browser session. In other words, Kreidler discloses that raw automation data is processed *on the client* to generate an HMI that is then displayed on the client. Accordingly, no transmitting of the HMI occurs. Furthermore, cited col. 8, ll. 1-8 merely discloses an interaction of a user with the host through the browser. This section fails to disclose that the interaction is through a persistent browser session.

In addition, independent claim 48 and 73 recite, “a communication component configured to interface *via* a network to a set of client devices associated with an industrial automation environment, and that initiates *via* the network *a persistent browser session* with at least one browser operating on a device included in the set of client devices” and “*transmitting the browser-based HMI over the network by way of the persistent browser session* to the at least one browser,” respectively. Kreidler fails to anticipate or suggest these features for at least the reasons detailed *supra* in connection with independent claim 45. For at least the foregoing reasons, claims 45-88 are believed to be allowable over the art of record, and this rejection should be withdrawn.

Furthermore, dependent claims 47 recites in part, “maintaining the at least one persistent browser session in an asynchronous and *continuous* manner.” Similarly, dependent claim 53

recites, “the communication component maintains the persistent browser session *in a continuous fashion while the browser-based HMI is displayed by the device*,” dependent claim 54 recites, “the communication component maintains the persistent browser session in a *continuous fashion* independent of completion of requests or responses” and dependent claim 75 recites, “maintaining the at least one persistent browser session in a *continuous* manner.” The Office Action points to column 2, lines 42-49 of Kreidler, which discloses “Data collection can be done in either synchronous or asynchronous fashion” as support for rejecting these claim.

However, disclosing communication can occur in either synchronous or *asynchronous* fashion does not disclose or suggest communication in a *continuous* fashion. In fact, asynchronous data collection suggests either large batch data transmitted periodically or sporadic event-oriented transmissions, neither of which suggests maintaining a persistent browser session in an asynchronous and *continuous* manner. Furthermore, what Kreidler discloses as being asynchronous relates to data collection, whereas claim 53 expressly recites “in a continuous fashion *while the browser-based HMI is displayed by the device*.” Kreidler does not disclose or suggest said data collection (e.g., the communication that can be asynchronous) occurs while the browser-based HMI is displayed. For at least the foregoing reasons, this rejection of claims 47, 53, 54, and 75 should be withdrawn.

In addition, dependent claim 62 recites, “further comprising a memory remote from the device that stores a library or profile associated with the browser-based HMI.” The Office Action alleges these features are disclosed at column 3, lines 18-24. However, the indicated portions detail a code specific to a machine tool that is used to identify data uploaded *from a machine tool to the host*. A machine tool is not the same as a browser-based HMI of claim 62. Accordingly, an identifying code specific to *a machine tool* is materially distinct from a library or profile associated with *the browser-based HMI*. For at least these additional reasons, dependent claim 62 is allowable for further reasons beyond those discussed in connection with independent claim 48 from which it depends.

CONCLUSION

The present application is believed to be in condition for allowance in view of the above comments and amendments. A prompt action to such end is earnestly solicited.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063 [ALBRP316US].

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicants' undersigned representative at the telephone number below.

Respectfully submitted,
TUROC & WATSON, LLP

/Nilesh S. Amin/

Nilesh S. Amin
Reg. No. 58,407

TUROC & WATSON, LLP
127 Public Square
57th Floor, Key Tower
Cleveland, Ohio 44114
Telephone (216) 696-8730
Facsimile (216) 696-8731